Calendar Planner for UbD 4th Grade Unit (4 weeks)

Operations & Algebraic Thinking: Understanding patterns, functions and coordinate plane

Week 2 - Functions	Vocabulary: inverse operation, function, rule Objectives: Given the input of a function, use an operation or its inverse to find an output. Write input or output values for functions that represent one or two operations. Make a function table to represent a problem, and write a rule and an equation for it.				
Action	Monday	Tuesday	Wednesday	Thursday	Friday
Essential & Topical Question	Quick review of patterns. With our math patterns we've predicted growing patterns. What is something that patterns would be useful for?	What does inverse mean? When might we use it?	What happens when we have two steps to complete? Review of money	Is the order of which we do things important? Class discusses different examples. (Recipes, projects)	What is a tessellation? Think about patterns, think about nature. Can anyone predict?
Learning Plan	Introduce a "function Machine". Identifying input and output. Start a drawing of a circle, send it down a line everyone adds something, what is the output? Use numbers and rules - practice with white boards.	Groups of 3. Function machine using dice. Student 1: Shake dice for input. Student 2: Shake dice state rule. Student 3: Figure output and record.	http://mathfactcafe.com (Use worksheet) Students will review money values, make patterns with money, find sums of coin patterns, make up rules.	Two operation functions. Draw a table on the board that shows that functions can involve more than one operation. Practice. Work in pairs using money.	We will create our own tessellations. Think about patterns, repeating patterns with colors, sequence. Can you write a rule for your tesselation?
Assessment	Visual assessment as you have kids hold up their white boards. Try to check off 5 students on each problem. After practice using inverse operations.	Students will turn in the tables they make for the Function Machine with dice. Have them then give and output, name a rule and see if they can figure the input!	Students will turn in money review worksheet. Students will show patterns made with money, record coins and amounts and totals.	Students will turn in work from doubled money chart. Input coin x 2 Add value of input coin. Output: What combination of coins could make up the answer. Show answer by drawing a picture turn in work.	Students will produce, name, and briefly explain their tesselations to the class. They will turn their tesselations in at the end of their presentation.
Comments, Extensions & Reflections	Look at home for things that go in - and something different comes out!	Find an example of when you would have to invert. (i.e.	Look at home or grocery store to find items that are packaged with multiple items per pkg. or carton. Make a function table w/ total # of items in # of pkgs. Include function.		Tesselations will be displayed in classroom.